

MESSAGE FROM THE PRESIDENT

Greetings,

By the time this reaches you, I hope your plans are made and bags packed for a trip to Anchorage for the 2003 RRF annual meeting. The agenda and program alone promise to be well worth the trip, but when you add to that the other advantages a meeting in Alaska offers, this one will be hard to beat.

In this *Wingspan*, I want to give you a question to think about on that long plane ride to Alaska, and that is: "What is the appropriate role of RRF in advocacy on behalf of birds of prey?" Increasingly, RRF is being called upon to join with other ornithological societies in an advocacy role on matters affecting raptors. These requests fall into two broad categories: (1) requests for expert scientific evaluation of particular proposals or issues, and (2) requests for organizational support for a position for or against a particular action. RRF has a long history of action within the first area, as evidenced most recently by our participation with The Wildlife Society in a review of the status of the Northern Goshawk. There isn't much consternation over this role, and I think it's generally accepted that RRF can and should contribute to the application of the best available science to decisions affecting birds of prey. In fact, it's a stretch to even call this activity advocacy. But RRF also has a long history of action within the second area, which squarely falls within the realm of advocacy. Our participation in this area has often been contentious and divisive. Partly this is because, in this area of advocacy, we enter into a realm where science, ethics, emotions, and personal values collide. But it's also partly because this type of advocacy is not clearly consistent with our By-laws, i.e., RRF By-laws, Article VIII, Section d, states "No substantial part of the activities of the Foundation shall consist of lobbying or taking advocacy positions." While this statement begs the question what constitutes "substantial," "lobbying," "taking," and "advocacy," at face value it strongly suggests that RRF should not be engaging in any significant way in advocacy, at least not without making a conscious decision to do so and changing our By-laws to reflect that.

This is not just an academic question; in my opinion, it goes to the core of what RRF is about. Recently, in response to requests from members or other ornithological societies, I've asked the RRF Board to take organizational positions on matters such as prairie dog eradication in Lubbock, Texas (with incidental impacts to burrowing owls); vulture control in Virginia; and the efficacy of wind turbines as a source of power, given their potential to cause raptor mortality. While we all share an interest in seeing that the decisions made on these issues are in the best interest of the raptors placed at risk,



expressing that opinion on the decision at hand has costs, and those costs are that we can't easily go back and forth between being an advocate and being an unbiased source of information. I think its time we gave some careful thought to what our role, as RRF, should be in matters such as this. As part of that, we should keep in mind that we are a member of two other organizations whose primary role is advocacy (American Bird Conservancy Policy Council and the Ornithological Council).

We'll be discussing this at our Board meeting in Anchorage, and if there's interest, in the General Business Meeting as well. I hope you'll take the time to share your thoughts, either privately or in one of these two meetings.

Regards,

Brian

**ANGELA MATZ IS THE NEW SCIENTIFIC PROGRAM CHAIR
FOR RAPTOR RESEARCH FOUNDATION**

I'm looking forward to filling the role that the very competent Jeff Smith vacated, and to working with the members and board of RRF. My research interests are in the effects of contaminants on raptors and other birds. I've worked for the U.S. Fish and Wildlife Service in Fairbanks, Alaska since 1999, after a post-doc at Manomet Center for Conservation Sciences in Massachusetts. I completed my Ph.D. in 1997 at the University of Maine - Orono, on contaminants in bald eagles, and have an M.S. in Environmental Toxicology from Western Washington University and a B.S. in Biology from Santa Clara University in California. I can be reached by phone (1-907-456-0442), email (angela_matz@fws.gov), or post (101 12th Avenue, Box 19, Room 110, Fairbanks, AK 99701, USA).

- Angela

THE RAPTOR RESEARCH FOUNDATION, INC.

(FOUNDED 1966)

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Wingspan is distributed twice a year to all RRF members. It is also available to non-members for a subscription rate of \$10 per year. *The Journal of Raptor Research* (ISSN 0892-1016) is published quarterly and available to individuals for \$33 per year (\$18 per year for students) and to libraries and institutions for \$50 per year from: Ornithological Societies of North America, P.O. Box 1897, Lawrence, KS 66044 USA. Add \$5 for destinations outside of the continental United States. Individual and student memberships renewed before November 15 are \$30 and \$15, respectively. Persons interested in predatory birds are invited to join The Raptor Research Foundation, Inc. Send requests for information concerning membership, subscriptions, special publications, or change of address to: Ornithological Societies of North America, P.O. Box 1897, Lawrence, KS 66044 USA.

PHARMACEUTICAL DRUG, DICLOFENAC, RESPONSIBLE FOR ASIAN VULTURE MORTALITY AND POPULATION CRASH

Researchers working on The Peregrine Fund's Asian Vulture Crisis Project reported at the 6th World Conference on Birds of Prey and Owls (Budapest, May 2003) that they have discovered the cause of mortality among vultures in Asia that is responsible for the rapid population crash in at least three species, *Gyps bengalensis*, *G. indicus*, and *G. tenuirostris*. Working at three breeding colonies in Pakistan with partners from the Ornithological Society of Pakistan, they measured high rates of annual mortality from visceral gout which is caused by renal failure. They measured catastrophic losses among the breeding population at the three sites since beginning studies in the 2000-01 breeding season. Based on these data, extinction at the colonies was projected to occur in less than five years.

Exhaustive testing of vultures collected at the three study sites that had died of renal failure and visceral gout (seen as a white, paste-like deposit on internal body organs) failed to find consistent evidence of either known or new infectious diseases, pesticides, poisons, heavy metals, or nutritional deficiencies. The researchers then began looking for new and unusual potential causes of renal failure, focusing first on sources of contamination of the predominantly livestock food source for vultures. Surveys among veterinarians and veterinary suppliers identified diclofenac as a widely used non-steroidal, anti-inflammatory drug (NSAID) that is known to be nephrotoxic in mammals. Testing for the drug in vultures that died of gout all proved positive, while tests in vultures that died of other known causes (mainly trauma) were all negative.

The researchers suggested that because diclofenac is an effective treatment for pain and inflammation in mammals it may have come to be used as a "cure-all" or "miracle cure" because sick or injured livestock respond quickly, if only temporarily, to the drug. In south Asia, sick and injured livestock are also the most likely to die and be left for vultures to consume.

A round table discussion following the papers concluded that removal of diclofenac from the vulture's food source needs to occur as soon as possible if the three vulture species are to survive. Setting aside some individuals of each species in captivity until this occurs may be an important precaution to take given the imminent extinction projected at the colonies studied in Pakistan. At the time The Peregrine Fund's studies began in 2000, these were the largest known remaining colonies of vultures in south Asia. Several organizations and individuals expressed interest in assisting with captive conservation measures, but funding for this potentially costly measure remained an unsolved problem. The discovery that a pharmaceutical drug is responsible for ongoing, mass poisoning of wildlife over an entire sub-continent should open the door for better scrutiny of pharmaceuticals in the environment on a global scale.

For more information, visit The Peregrine Fund's website at: www.peregrinefund.org.

**RAPTOR RESEARCH FOUNDATION, INC.
DRAFT RESOLUTION DRAFT**

Dear RRF Members,

This is a draft resolution on wind turbines and the potential impacts on raptors. In late May, a proposed Cooper Ornithological Society resolution on windpower impacts on birds was sent to the RRF to see if we wanted to support that resolution by forming our own. The RRF board discussed the issue, and considered it important enough to redraft and present it to the membership for a vote at the upcoming annual meeting in Alaska.

The discussion concerning this resolution covered a variety of aspects of the issue. Some aspects discussed included placing likely impact of wind turbines relative to other anthropogenic sources (e.g., buildings, house cats) into numerical context, the extent to which this resolution is 'lobbying,' and the extent to which the windpower industry has been cooperative in trying to reduce wildlife impact relative to other forms of energy production. The resulting draft text seeks to achieve balance on the issue, while promoting the mission of the Raptor Research Foundation.

As it stands, this resolution focuses somewhat on the tax credit to wind power companies in the United States. However, because it promotes the adoption of minimum standards for siting of turbines, research into the effects of turbines on birds, and use of the best technologies to reduce impact on birds, it expresses an opinion of the RRF that is applicable in other parts of the world. In fact, it may lead to further resolutions aimed at clarifying RRF's stand on wind power and raptors in other parts of the world.

The draft text is not necessarily final and you, the members, can participate in the process by sending your comments and suggestions either to board members or to the resolutions chair, Mike McGrady (mikejmcgrady@aol.com). The draft text for the resolution to be voted upon will be finalized in the week before the annual meeting. The draft text will be considered by the board at the board meeting for recommendation to the membership at the annual business meeting, where it will be put to a vote.

*Mike McGrady
Resolutions Chair*

WIND TURBINES AND POTENTIAL IMPACTS ON RAPTORS

WHEREAS, energy generation using renewable resources such as wind energy provides the promise of a potentially significant, non-polluting energy source using a renewable resource without most of the negative impacts to bird populations that accompany traditional energy generation through non-renewable resources; and

WHEREAS, levels of raptor and other avian mortality that could result in impacts at the population level have been documented at some wind turbine facilities; and

WHEREAS, reasons for this mortality are not well understood and cannot therefore be mitigated until they are much better understood; and

WHEREAS, the Wildlife/Wind Interaction Working Group of the National Wind Coordinating Committee published in 1999 a Guidance Document detailing the studies recommended for determining potential impacts of wind energy projects on birds and for monitoring such impacts and, more recently, in July 2003, the U.S. Fish and Wildlife Service issued its Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines; and

WHEREAS, the current federal tax credit afforded to wind energy producers will expire on 31 December 2003 and is presently before Congress for renewal; and

WHEREAS, wind energy producers are required to have turbines in operation by 31 December 2003 in order to claim the tax credit and therefore do not have sufficient time to conduct the studies recommended by the Wildlife/Wind Interaction Working Group and the U.S. Fish and Wildlife Service;

THEREFORE BE IT RESOLVED THAT the Raptor Research Foundation highly recommends that, if the federal tax credit is extended, it be amended to provide that the tax credit shall not be available unless the tax credit applicant can document that siting (pre-construction) studies to determine the potential impacts on birds have been completed, and that these siting studies conform at least to the standards established by the Wildlife/Wind Interaction Working Group and the US Fish and Wildlife Service, and all measures of these standards be implemented, including compliance with siting guidelines to minimize and mitigate the impacts on birds; and

BE IT FURTHER RESOLVED that the Raptor Research Foundation calls on wind energy producers, government and other interested parties to promote the (1) establishment of a research fund to be used to study the impacts of wind turbine facilities on birds and to develop technologies to reduce or eliminate the negative impacts of wind energy facilities on birds, and (2) development of new and better standards aimed at reducing impacts on birds at wind power producing sites that are based on the best available scientific information, and (3) use of the best available technologies to reduce or eliminate avian mortality at wind energy facilities.

CALIFORNIA BURROWING OWL SYMPOSIUM

Sacramento, California, 11-12 November 2003

A California Burrowing Owl Symposium will be held November 11 and 12, 2003 at the Radisson Hotel in Sacramento, California. The Western Section of The Wildlife Society and Albion Environmental, Inc. invite you to join researchers, conservationists, resource managers, representatives of resource agencies, and others interested in Burrowing Owl conservation in California. This 2-day symposium will comprise invited papers, submitted papers, and panel discussions by invited speakers in topical sessions on California Burrowing Owl research, management, status, regulation and policy. Anyone wishing to present a paper in the research, management, or regulatory sessions is invited to submit an abstract before September 1, 2003 to Jack Barclay, Technical Program Chair, Albion Environmental, Inc., 1414 Soquel Avenue, No. 205, Santa Cruz, CA 95062, USA; phone: 1-831-466-1786; fax: 1-831-469-9137; e-mail: jbarclay@albionenvironmental.com. Abstracts should be no more than 250 words and can be submitted as an electronic file prepared using word processing software as an attachment to an e-mail. Registration and general symposium information is available on the Western Section's website: <http://www.tws-west.org> or by contacting Barbara Rocco, Executive Director of the Western Section of The Wildlife Society at lobolady23@aol.com.

LESLIE BROWN MEMORIAL AWARD, 2002

Ruth Tingay



Population Dynamics and Behavioural Ecology of the Critically Endangered Madagascar Fish Eagle: Implications for Conservation

Ruth Tingay is a British Ph.D. student at the University of Nottingham (UK) and at The Peregrine Fund (USA). Ruth developed her interest for raptor conservation after working at London's Heathrow Airport, monitoring the legal and illegal trade in wildlife. She resigned in 1994 to pursue a more proactive role in conservation and has since conducted raptor studies in Mauritius, USA, Mexico, UK, Israel, and Madagascar. She earned her M.Sc. from the University of Nottingham in 2000 for her work on the breeding strategies of the Madagascar Fish Eagle, *Haliaeetus vociferoides*. As a result of her study, she was awarded a Ph.D. scholarship in 2000 to further her research on the population dynamics and conservation genetics of this species. Ruth will use the Leslie Brown award to fund her genetic analyses of the historical and contemporary Madagascar Fish Eagle populations, the results of which will be used to guide conservation planning for this critically endangered raptor.

SANDPIPER EQUIPMENT GRANTS

Sandpiper Technologies has extended availability of its rental/grant equipment to include off-season research. The company has issued Equipment Grants to U.S. and Canadian students since 1998, and now makes the equipment available during the fall and winter months. Although there is no deadline for applications during the off-season, students must follow the requirements detailed on the company's website (<http://sandpipertech.com/grants.html>). The deadline for the Equipment Grant Program during the 2004 spring/summer field season is December 1, 2003. Equipment available through the grant program includes TreeTop Peepers 1 & 2, three types of Video Probes, and the Basic Sentinel System 1. For more information about the Sandpiper Equipment Grant Program, visit the company's website.

LESLIE BROWN MEMORIAL AWARD, 2003**Odette Curtis*****Black Sparrowhawks vs. the Working for Water Project: Recognising and Resolving a Conflict of Environmental Interests on the Cape Peninsula, South Africa***

Odette Curtis is an M.Sc. student at the Percy FitzPatrick Institute, University of Cape Town, South Africa. She is currently working on the distribution and conservation of the Black Harrier in the Western Cape, South Africa, for her degree. Before this, Odette completed her B-Tech degree in Nature Conservation (Cape Technikon), while working on various raptor projects at the "Fitz." Odette has continued to work on other raptor projects while working on her M.Sc. The Black Sparrowhawk Project is one of these additional projects. The study examines the situation of conflict between the welfare of tree-nesting raptors and the activities of alien-tree clearing initiatives (specifically, the Working for Water Project [WFW]), using the Black Sparrowhawk population of the Cape Peninsula as a test-case scenario. The fieldwork primarily involves monitoring nests on the Cape Peninsula and colour-ringing breeding adults.

The ultimate aims of the project are: (i) to minimize the number of active Black Sparrowhawk (and other tree-nesting raptor) nests that are disturbed or felled during WFW activities on the Cape Peninsula; (ii) to study the effects of large-scale habitat destruction (as a result of alien tree clearing) on the distribution, success and composition (in terms of marked individuals) of Black Sparrowhawk pairs on the Cape Peninsula; and (iii) examine the immediate and long-term effects of deforestation on a forest-dependent raptor population.

Odette will use the Leslie Brown award to fund her sparrowhawk fieldwork, as well as to create greater raptor-awareness among WFW project managers (through presentations and posters). Managers will also be trained to be more vigilant for breeding raptors in alien plantations, and encouraged to give careful consideration to breeding birds of prey when planning alien-clearing schedules.

ORGANIZATION PROFILE

BIRDS OF PREY PROTECTION SOCIETY

by Dobromir Domuschiev

The Birds of Prey Protection Society (BPPS) was established in 1990. It is among the most active non-governmental organizations (NGOs) in Bulgaria. While working on various conservation projects, BPPS's main priority remains disclosure and prevention of illegal collection of, and trade in, the eggs and young of raptor species. After several years of intensively pursuing this goal, we have encouraging results. A lot of illegally caught birds have been confiscated, returned back to their nests, released in the wild, or in relatively rare cases sent to zoos or rehabilitation centers. BPPS's efforts were acknowledged by the British Embassy in Sofia, which awarded our project through funding from the Department of Foreign and Commonwealth Office of the UK Government. Its framework consists of two major activities:

- Continuous guarding provided for 5 nests of endangered raptor species throughout 3 seasons (we have confirmed information that they had been invaded by poachers).
- An information and education campaign, including publication and dissemination of a specially designed handbook to be used (free of charge) by customs officers, judges, prosecutors, rangers, forest guards, representatives of the Ministry of Environment and Water, and police. The handbook will contribute towards improving and simplifying their work, since it will contain a full guide to the birds of prey and owls of Bulgaria, the related national legislation currently in force (plus comments and clarifications), contact information for state institutions and NGOs, and CITES-related information.

Another priority of BPPS is activities concentrated on the recovery of vulture species. We are members of a partnership established in relation to the *Action plan for recovery of the vultures on Balkan Peninsula and adjacent regions*, developed by the Black Vulture Conservation Foundation (BVCF) and the Frankfurt Zoological Society (FZS). As part of this program, we are currently starting to work on our project for recovery of the Griffon Vulture (*Gyps fulvus*) in the Vrachanski Balkan mountains, with funding provided from BVCF and FZS.

Those who wish to learn more about BPPS's activities may contact: Birds of Prey Protection Society, 40 Vassil Levski Boulevard, Sofia 1000, Bulgaria; *phone*: 359-2-963-4037; *e-mail*: bppls@abv.bg.

TO BE OR NOT TO BE A GRIFFON*Response*

There are five species of large cliff-nesting vultures in the Old World which are generally known as griffons, genus *Gyps*. The Ruppell's and Himalayan Griffons have never been called anything else until recently; for the 150 years of its scientific existence the Cape was known as Kolbe's Griffon; and so on. So Bill Clark is altogether wrong (uncharacteristically!) when he writes that "everyone called the vultures in the genus *Gyps* 'Vultures' " (*Wingspan*, September 2002, p. 12). Quite the opposite in fact. A griffon is a certain kind of vulture, with a whole suite of attributes, and the name is special and evocative, and is I believe absolutely worth keeping.

In 1750 (?) the French suggested the name of le griffon for their species, what later became known even to them as le vautour fauve. So the English compromised and called it Griffon Vulture! - it does not occur in the UK. Two of the reasons for my own particular list of suggestions for these vultures - whoops, I mean griffons - is to get away from the Eurocentric method of naming birds, and also to develop a logic among the community of vultures. The French have always been better at naming birds than have the English who use very prosaic names, and there were perhaps none better than Francois Levallant who named, among many others, le Bateleur.

Does it matter what happens in the world of eagles, which Bill uses as a comparison? Actually the griffons are much more different from the white-backed vultures (genus *Pseudogyps* in my world) than is the Black Eagle from the Lesser Spotted Eagle.

Therefore I totally disagree with Bill's recommendation in his last sentence. I have put out my case more fully in *Vulture News*, 2002, 46:20-23. Nevertheless it must be said that we should pay our attention to scientific (Latin) names rather than the common (vernacular) names. In that regard I think that people should give what name they like to a plant or animal, providing they attach the Latin name for general comprehension. For example, both Bill and I know that Verreaux's Eagle and Black Eagle are one and the same.

Peter J. Mundy

COMMENTS ON TERMINOLOGY USED IN AGEING AND TRACKING

Commentary

AGEING

The AOU has adopted the so-called Humphrey-Parkes terminology (Humphrey and Parks 1959, *Auk* 76:1-31) for describing age-related plumages (and molts) of birds for North America. Yet many raptor (and other bird) researchers continue to use other, often imprecise terminology in their talks and papers. I suggest that all of us should use properly defined and therefore universally understood terms. Specifically:

Juvenile should be used for all raptors in their first plumage. Most of the smaller species have only one immature plumage and should be called "juveniles" (noun), e.g., Sharp-shinned Hawk, Common Buzzard, Crested Goshawk, and Black Harrier. Their first plumage should be called "juvenal" (adjective) plumage in North America and "juvenile" plumage elsewhere.

Immature should be used collectively for non-adult raptors that have more than one immature plumage. This is not the same as "juvenile." "Juvenile" is preferred for species that have only one immature plumage. Many field guides, especially older ones, use "immature" for "juvenile." Swainson's Hawks, White-tailed and Golden Eagles, and Snail Kites all have more than one immature plumage, so the terms "juvenile Golden Eagle" and "immature Golden Eagle" do not mean that same thing; the first refers to eagles in the first plumage, and the second to all non-adult eagles.

Basic I is the second plumage for raptors that do not attain adult plumage by the second plumage. **Basic II** is the third plumage for raptors that do not attain adult plumage by the third plumage. And so on with **Basic III**. **Older immature** should be used collectively for all raptors in immature plumages older than juvenile.

Adult is preferred in raptors over **Definitive Basic**, as raptors do not have an **Alternate Basic** plumage. Use of the term **Subadult** should be avoided as it has not been clearly and singularly defined and its use often causes confusion. It has been defined at least three different ways, namely: 1) same as immature, 2) same as older immature, and 3) first adult plumage when it shows a few immature characters retained.

TRACKING/TELEMETRY

The terms "tracking" and "telemetry" are being used interchangeably, but they have quite different meanings. **Tracking** means following the track of a bird (raptor in our case) using any means, but most often by a signal from a small transmitter attached to the raptor sent to a receiver or a satellite. **Telemetry** means sending information using a radio signal: in our case, information about a raptor, such as heart rate, activity, etc. or information about its surroundings, such as atmospheric pressure, temperature, and the like.

Most studies nowadays using either satellite or hand-held or vehicle-mounted receivers are directed towards following the tracks of raptors (and other birds). These should be properly called tracking studies. They should be called telemetry studies only when measurement information is transmitted to the receivers. Some studies could be called either tracking or telemetry or both, if both a raptor is tracked and information transmitted.

William S. Clark

MUSEUM RED-TAILED HAWK EXHIBIT READY FOR ANOTHER TOUR OF DUTY

by Linda Coldwell

Although the Red-tailed Hawk is a common sight in Oklahoma's fields and along state highways, few people have the opportunity to see the hawk up close, or learn much about its biology. "The World of the Red-tailed Hawk," developed by the Sam Noble Oklahoma Museum of Natural History at the University of Oklahoma in Norman, is a self-contained outreach exhibit that can bring the hawk into schools, libraries, and other venues throughout the region (see *Wingspan* 9(1):10). This popular traveling exhibit, developed in the mid 1990s, has recently been updated with new information and museum specimens. It will be on exhibit at the museum from August 2 to November 30, 2003. Beginning in January 2004, this popular exhibition will again be available for rental.

"The World of the Red-tailed Hawk" features examples of the hawk's common prey, its biology and place in the ecosystem. In addition, the exhibit explains ways in which scientists study the hawk, and how hawks and other raptors serve as icons to many Native American tribes. The centerpiece of the exhibit is a realistic Red-tailed Hawk nest complete with two mounted adult hawks and three nestlings, plus a collection of prey remains and pellets. A collection of mounted and study skin specimens, skeletons, and other objects is also included in the display. To help enrich the exhibit's impact in schools, the museum also provides photos and videotapes of hawks catching prey and feeding their young, and of the young birds learning to hunt. A series of interpretive, hands-on activities for students and teachers help educators integrate the exhibit into the classroom. For information on renting "The World of the Red-tailed Hawk," please call the museum's administrative office at 1-405-325-4712. Additional information is available on the museum's website: www.snomnh.ou.edu.

SWALLOW-TAILED KITE WORKSHOP SUMMARY REPORT

15-18 July 2003

Archbold Biological Station, Lake Placid, Florida

by Jennifer Coulson

Researchers, state and federal wildlife managers, and timber industry foresters convened to discuss the status of the northern subspecies of the Swallow-tailed Kite (STKI), *Elanoides forficatus forficatus* and to determine the direction of future conservation efforts. The workshop was organized and supported as part of a U.S. Fish and Wildlife Service contract with Florida, Georgia, and South Carolina to develop Candidate Conservation Agreements (CCA) for the species. Nineteen participants represented nine states.

The meeting opened with overviews from each state that will be published in a small proceedings. Cliff Shackelford's Texas report can be downloaded from: www.tpwd.state.tx.us.htm. Mark Woodrey sent a slide show on nesting and roosting activity in Mississippi. Eric Soehren reported on nests, roosts, and sightings in Alabama, and Jim Bednarz reported on nest search efforts in Arkansas. Long-term, on-going nest monitoring and roost surveys continue in Louisiana and Mississippi by Jennifer Coulson, in Florida and Georgia by Ken Meyer, and in South Carolina by John Cely and Andy Day. E. J. Williams emphasized the need to develop conservation agreements with private landowners and timber companies because many nests are on private lands. Craig Watson spoke about the potential for kites to nest in North Carolina.

A number of presentations addressed what is known about threats to current populations. Coulson and Meyer reported on their demographic studies that are identifying potential limiting factors and threats. Some of these are small clutch size, delayed maturation, predation, and weather. Meyer presented radio and satellite telemetry data on migration and wintering ecology. Because STKI spend approximately 40% of the annual cycle migrating, more effort should go toward conservation of stopover habitat. Gina Zimmerman is identifying and characterizing stopover habitat; she also studies ectoparasites. Audrey Washburn is researching STKI phylogeography and species origins, and is investigating the validity of the subspecies delineation. Diana Swan, Meyer, and Karl Miller closed this session by presenting a trial run of a Population Viability Analysis for the Florida subpopulation.

The remainder of the workshop focused on conservation measures. Swan spoke about landowner outreach and incentives, and recommended the CCA as a method of conserving STKI habitat. A variety of programs are in place; because most are driven by state management recommendations, we should provide management guidelines to states. Swan underscored the need to track ownership of nesting and roosting sites. Meyer discussed population monitoring methods, and the group provided input for the North American Raptor Monitoring Strategy that he is writing. The approach may involve nest-area surveys and surveys of the large pre-migration roosts. Hawk watch dates might also be expanded to include peak STKI migration times. Williams led a discussion on how to initiate state monitoring programs. A relatively inexpensive way to identify areas STKI use is to solicit sighting reports from the public and from state agencies. For an example visit: www.gos.org/sightings/stki.html. States can work with landowners on conservation agreements as soon as STKI areas have been identified. Chuck Hunter discussed the status of the STKI. This species meets the criteria for a "bird at risk" and also qualifies for the North American Watchlist. According to the CCA project status evaluation performed by Swan, Meyer, Williams, Brian Millsap, and Cely, the STKI meets criteria for listing based on both IUCN and State of Florida criteria because of small population numbers (number of mature individuals < 2500 and number of mature individuals per subpopulation < 250). The group decided that listing at the federal level might be warranted but that conservation goals might be more easily achieved if we continue and greatly expand upon current proactive measures. The group then drafted

management guidelines for foresters who might have STKI nesting on their land. The draft includes nesting dates and suggested buffer sizes with more stringent recommendations for nests on public lands. The workshop ended with a brainstorming session that produced goals for regional conservation action.

Field trip highlights included Sandhill Cranes, Florida Scrub-jays, Crested Caracaras, and a Short-tailed Hawk. But the *pièce de résistance* was the visit to the Fisheating Creek communal roost of approximately 940 STKI. It was mind-boggling and frightening to think that in a two-hour period, we observed one-fifth of the entire U.S. population. This roost shifted location recently when kites moved to avoid airboat traffic. Meyer stressed the importance of protecting the large pre-migration roosts in Florida that in mid to late summer harbor more than 50% of the U.S. population. Swan, Meyer, and Williams are to be commended for planning and hosting this highly productive workshop.

(Editor's note: Questions about the workshop may be directed to Jennifer Coulson at jacoulson@aol.com.)

REPORT ON THE 6th RAPTOR WORLD CONFERENCE in Budapest (Hungary)

by B.-U. Meyburg & R. D. Chancellor

Recently (18-23 May 2003), the 6th World Conference on Birds of Prey and Owls was held in Budapest (Hungary). The conference venue was the Hotel Agro, situated on a hilltop on the edge of the city, with a fine view of Budapest and several nearby areas of forest. Here participants gathered from 47 countries including Brazil, Cuba, the USA, Canada, South Africa, Kenya, Ivory Coast, Saudi Arabia, Israel, Russia, China, Taiwan and Japan.

At the opening, the assembled participants were welcomed by the WWGBP Chairman (Bernd-U. Meyburg), the Hungarian Minister of the Environment (Miklós Persányi), the President of MME/BirdLife Hungary (Gyorgy Kallay) and a leading member of BirdLife International (Nigel Collar). Following the official opening, Ian Newton gave a keynote address on Population Limitation in Owls; Laszlo Haraszthy presented an overview of the status of raptors and their conservation in the host country, Hungary; and Robert Risebrough gave an account of the population crash of the three vulture species of the genus *Gyps* in the subcontinent of India. Finally, M. Barbieri gave a summary of the Bonn Convention on the Protection of Migratory Species, its present and future role in the conservation of birds of prey and owls. After dinner, two films were shown, one on bird protection in Hungary, the other on Andean and Californian Condors.

Monday morning (19 May) was devoted to birds of prey in Hungary. Today, in Hungary, 21 raptor species breed, and 34 in all have been recorded. Between 600 and 800 members of a special Working Group are dedicated in particular to their protection. Their activities form an exemplary model which one wishes other countries would follow. Conservation measures include monitoring, nest guarding, erection of artificial nests, and prevention of electrocution from power lines. Species that are increasing in numbers or have renewed breeding include Imperial Eagle, Saker Falcon, White-tailed Sea Eagle, Golden Eagle, and Peregrine Falcon. There is now a three-year Life project on Imperial Eagle, for which the EU has made considerable funding available and within the scope of which three biologists are employed to work exclusively on this species. Unfortunately, there are also several declining species: Short-toed Eagle, Lesser Spotted Eagle, Black Kite, Levant Sparrowhawk, Red-footed Falcon, and Booted Eagle.

The outstanding topic of the conference was the population crash of three *Gyps* vulture species in southern Asia, particularly in India and Pakistan, and the discovery of the causal mechanism. Other conference sessions covered Falcons, Environmental Contaminants and Raptors, Population Limitation, Electrocutions,

Raptor/Human Conflicts, Taxonomy and Phylogeography, Eagle Studies, Biology of Owls, and General Raptor Studies. The scientific programme ended with the 5th Imperial Eagle Workshop and a roundtable on the Red Kite. In all, 173 abstracts were submitted for 124 oral and 53 poster presentations which were assembled in a 72-page booklet given to all participants at the start of the conference (abstracts are available at www.raptors-international.de/LAST_CONFERENCE/Abstracts/abstracts.html). This collection provides the most up to date survey of current raptor and owl research worldwide. It is regretted that only a limited number can be accommodated in the conference proceedings.

At the close of the conference 15 Resolutions were adopted (see below), of which that dealing with the Saker Falcon provoked several days of heated discussion until a version acceptable to all concerned could be arrived at. The proposal to ban all taking of individuals from the wild was not adopted, despite the dramatic decline of the populations in nearly all range states and the shining example of Hungary and its advocacy.

On one day (Wednesday, 21 May) during the conference and following its close, participants could enjoy excursions arranged by several tour organisations. These visited different regions, especially in eastern Hungary, where there were good opportunities to observe the typical avifauna of the country.

WWGBP RESOLUTIONS

The following resolutions were adopted by the World Working Group on Birds of Prey and Owls at its Sixth World Conference in Budapest, Hungary, May 18-23, 2003.

RESOLUTION 1

RECOGNISING the work undertaken by the local organising committee of MME/BirdLife Hungary in making the 6th World Conference on Birds of Prey and Owls such a success; WARMLY THANKS MME for its generous hospitality in hosting the event and for the high level of patient, dedicated assistance by members and their supporters during the conference.

RESOLUTION 2

RECOGNISING the immense achievements of the State of Hungary, particularly the role played by MME/BirdLife Hungary, in restoring and maintaining the populations of the Saker Falcon, Imperial Eagle and most other birds of prey, through legislation, enforcement, habitat protection, awareness campaigns and innovative management techniques; CONGRATULATES Hungary on these achievements; and URGES that other countries consider adopting similar measures in order to achieve similar results with their bird of prey populations.

RESOLUTION 3

RECALLING that the Convention on the Conservation of Migratory Species of Wild Animals 1979 (CMS) encourages international cooperative action to conserve migratory species; CONSIDERING that migratory raptors constitute an important part of the global biological diversity which, in keeping with the spirit of the Convention on Biological Diversity 1992 and Agenda 21, should be conserved for the benefit of present and future generations; AWARE of the environmental, ecological, genetic, scientific, aesthetic, recreational, cultural, educational, social and economic values of raptors in general; CONSCIOUS that migratory raptors are particularly vulnerable because they migrate over long distances, with many species being reliant upon land-bridges and/or networks of fragile habitats that are declining in extent and becoming degraded through unsustainable human activities; RECOGNISING the need to take immediate action to halt the decline of migratory raptor populations and their habitats in the geographic area of the African-Eurasian raptor migration systems; CONVINCED that a multilateral agreement and its implementation through coordinated and concerted action would contribute significantly to the conservation of migratory raptors and their habitats in the most

effective manner, and would deliver ancillary benefits for many other species of animal and plant; URGES the CMS Secretariat and other bodies of CMS, notably the Scientific Council, urgently to consider establishing a multilateral agreement on the conservation of African-Eurasian migratory raptors; ACKNOWLEDGES that effective implementation of such an agreement would require assistance to be provided to some range states for research, training and monitoring of migratory raptor species and their habitats, for the management of those habitats as well as for the establishment or improvement of scientific and administrative institutions for the implementation of such an agreement; and FURTHER URGES all range states within the African-Eurasian geographic area actively to embrace this proposal and to work together to establish, ratify and implement such an agreement as a matter of urgency.

RESOLUTION 4

WHEREAS windfarms can cause considerable mortality of raptors such as vultures and eagles, and threaten endangered or highly vulnerable migratory and resident species of raptor and other birds; RECOGNISING the importance of renewable energy sources; URGES all governments to assess the positioning of windfarms for impacts on raptors and other aspects of the environment; and FURTHER URGES governments to ban their use in areas which possess high densities of vulnerable bird species or are located on major bird migration routes; and SPECIALLY URGES the Israeli Government to cancel the plan to build windfarms along the Great Rift Valley, a bird migration route of global importance.

RESOLUTION 5

WHEREAS there is growing evidence that pesticides of high toxicity to birds such as Monocrotophos as well as other organophosphorus and carbonate pesticides in particular are being used to poison birds and other vertebrates; WHEREAS raptor populations, such as Vultures in southern Europe, the Balkans, Middle East and Africa are placed at risk by this practice; RECOGNISING that insecticides of high toxicity to birds are often not essential to farming practices; URGES the competent authorities to restrict the availability of such insecticides where these products are being abused and to carry out the necessary education and enforcement to ensure swift cessation of these practices.

RESOLUTION 6

WHEREAS several insecticides of high toxicity to birds such as Monocrotophos and some other organophosphorous and carbonate pesticides are causing bird mortalities worldwide; RECOGNIZING that birds of prey appear to be particularly sensitive to these pesticides and are being killed following labeled use of several products; URGES competent authorities to re evaluate and to conduct extensive impact assessments on products of high avian toxicity with the aim of quickly replacing them with safer products.

RESOLUTION 7

RECOGNISING that Buskett Gardens Nature Reserve on Malta is a site of outstanding universal value for migrating birds of prey (e.g. 1,000 Marsh Harriers in one day); NOTING that Maltese law protecting these birds is not being fully enforced in and around the reserve; URGES the Maltese Government to enforce the law and to nominate the site to UNESCO for World Heritage Site status.

RESOLUTION 8

CONCERNED that the killing of migrating birds of prey on and surrounding Malta continues unabated on a massive scale, despite protection of these birds under Maltese and European law; NOTING that Malta is about to accede to the European Union, but that the Birds Directive has recently been derogated to encourage this move; URGES representative bodies of the European Union to act on their responsibilities and direct resources to ensure that the laws protecting birds, including birds of prey, on Malta be upheld and that a tourism industry be built around the migration spectacle which can be expected to sustain conservation action into the long term.

RESOLUTION 9

CONCERNED about the strong decline of the Lesser Spotted Eagle at least in some countries at the western edge of its range (e.g. Germany, Hungary, Croatia, Serbia, Greece); RECOGNISING that the Lesser Spotted Eagle has the longest migration route of all European eagle species, ranging from breeding areas in Central and Eastern Europe to wintering grounds in southern Africa; CONCERNED that hunting, particularly in the Middle East and Turkey, is thought to have been responsible to a large extent for the decline in numbers of Lesser Spotted Eagles; CONSCIOUS that concerted, coordinated action must be taken immediately to prevent any further decline of the remnant populations in the countries in question, and convinced that the conclusion of some form of multilateral agreement and its implementation would contribute significantly to the conservation of this species; NOTING that the Lesser Spotted Eagle is listed on Appendix II of the Convention on the Conservation of Migratory Species of Wild Animals (CMS); URGES the Secretariat and other relevant bodies of CMS to consider without delay the possibility of establishing a Memorandum of Understanding, or other appropriate CMS instrument, on the conservation of the Lesser Spotted Eagle.

RESOLUTION 10

NOTING that the Lesser Spotted Eagle is listed as Species of European Conservation Concern (SPEC) only in Category 3, and considering that these categories normally list species which are not concentrated in Europe, whereas in reality far more than 50% of the species' population lives in Europe, and is declining; CONCERNED that the world population of the species is 20,000 pairs or fewer; URGES BirdLife International to re-assign the Lesser Spotted Eagle to SPEC Category 2 in its current revision of SPEC categorisation.

RESOLUTION 11

WHEREAS carrion-eating raptors rely heavily on carcasses from domestic livestock for their survival; ACKNOWLEDGING widespread concern over various human diseases (such as bovine spongiform encephalitis) and the need to eradicate these diseases; ALARMED that the currently existing carcass-disposal arrangements within the territory of the European Union (Regulation 2002/1774 and subsequent decision 2003/322/CE) are impossible to put into practice (both technically and economically); AWARE that carrion-eating raptors often perform a major service in eliminating otherwise undetected carcasses; URGES all countries worldwide where both breeding and foraging areas of carrion-eating raptors occur to create a feasible legal framework to ensure the continuous feeding of these birds, the maintenance of extensive livestock keeping, and the establishment of feeding stations as a management tool in areas where this management technique is necessary.

RESOLUTION 12

WHEREAS Steller's Sea-eagle is listed in the International (BirdLife and IUCN) Red List, the Red Data Book of Russia, Appendix II of the Convention on International Trade in Endangered Species (CITES), Appendix I of the Convention on the Conservation of Migratory Species of Wild Animals (CMS), and agreements for the protection of migrating birds between the USA, Russia, Japan and Korea; WHEREAS Steller's Sea-eagle is one of the most vulnerable species of birds of prey in the Pacific region, and its population in the southern part of the Sea of Okhotsk is in decline; WHEREAS the main nesting grounds of Steller's Sea-eagles in Sakhalin and the Lower Amur region are located on the coast, and this population depends on the preservation of coastal habitats; WHEREAS these regions are areas of intensive exploration and development for oil and gas deposits, involving many large companies (such as Exxon, Shell, Mitsui, Mitsubishi, etc.), and considering that this circumstance may continue for the next 50 years, exposing the species to risks of habitat alteration, disturbance, and pollution resulting from oil development; WHEREAS a considerable proportion of the global population of Steller's Sea-eagle winters in the South Kuril Islands and in northern Hokkaido, which are areas that could potentially be affected by oil-spill accidents; WHEREAS mortality of Steller's Sea-eagles wintering in Hokkaido owing to lead poisoning remains a serious problem; and WHEREAS the naturally low reproductive potential of Steller's Sea-eagle will make recovery difficult if the population dramatically declines; URGES that all oil companies and the Japanese and Russian Governments support research and monitoring efforts and take

appropriate measures to maintain healthy populations of Steller's Sea-eagle throughout its annual range in the areas potentially affected by oil-field development.

RESOLUTION 13

CONGRATULATING the Polish government on having created the Biebrza National Park and other important reserves in the north-east of Poland as part of the Natura 2000 network of specially protected sites; AWARE that the construction of a major highway from Warsaw to the Baltic states is a major necessity; URGES the Polish Government and the European Community (as the major donor body to the project) to plan the route so as to minimise the environmental impact of the highway; and RECOMMENDS the highway to be routed on the shorter western option.

RESOLUTION 14

AWARE that the Saker Falcon has experienced very severe population declines in most range states, owing largely to unsustainable levels of exploitation by trappers and traders for falconry, and that it is imperative to reduce the levels of offtake in the species; URGES the range states to work with BirdLife International, IUCN, the CITES Secretariat, the International Association of Falconry and Conservation of Birds of Prey, the World Working Group on Birds of Prey and Owls and other stakeholders, to make a comprehensive evaluation of the global status of the Saker Falcon against IUCN criteria before the next Conference of the Parties to CITES in November 2004, and to take other actions deemed necessary as a result of their joint collaboration, in order to assure the long-term survival of healthy populations of the Saker Falcon throughout its range.

RESOLUTION 15

WHEREAS populations of three species of vulture, numerous in the Indian Subcontinent as recently as six years ago, are rapidly declining as a result of a high rate of mortalities and may even be approaching extinction; THANKS The Peregrine Fund of the USA, the Royal Society for the Protection of Birds in the United Kingdom and their partner organisations for their efforts to find the cause of these mortalities in programmes they have developed with colleagues in Pakistan, Nepal and India; and ENCOURAGES their ongoing cooperation towards the recovery of vulture populations.

LAUNCH OF KALAHARI RAPTOR ROUTE

The Kalahari Raptor Route brochure aims to attract bird-watchers to the Kalahari, thus providing much-needed revenue to this dry part of South Africa; ultimately the initiative will contribute towards the conservation of the region's raptors.

Not long ago there were few large raptors on farmland in the southern Kalahari, South Africa, that is outside the famous Kgalagadi Transfrontier Park, regarded by many as one of Africa's raptor meccas. The eagles and vultures in particular had fallen victim to the farmers' guns, gin traps, and poison. Twelve years ago, raptor numbers were dwindling in this region of South Africa's Northern Cape Province; that is until Abrie Maritz, a sheep farmer from Olifantshoek, stepped into the picture.

For the past decade, under the auspices of the Endangered Wildlife Trust's Raptor Conservation Group and with generous financial and logistic support from SA Eagle Insurance Company and the Mazda Wildlife Fund, Abrie has coordinated the Kalahari Raptor Project. His work has involved farmer extension, resolving wildlife-livestock conflicts, and research, especially the monitoring of breeding raptors and the ringing of nestlings. His commendable contribution has resulted in raptors returning in droves to these Kalahari farming areas, and this desert environment is now home to at least 50 pairs of Lappet-faced Vultures, eight pairs of Bateleurs, and a multitude of other birds of prey. As a result, the

Kalahari has become an important destination for bird-watchers who want to observe raptors, especially some of the scarcer species such as Martial Eagle, Red-necked Falcon, and Pygmy Falcon.

With the Kalahari now becoming one of Africa's finest raptor-watching areas, it was decided to produce a guide, the "Kalahari Raptor Route", for use by bird-watchers and other eco-tourists. With financial support from the Northern Cape Tourism Authority; Kalahari Tourism; The Green Kalahari; and the Department of Agriculture, Land Reform, Environment & Conservation, this initiative recently reached fruition. A beautiful A2 map, with illustrations by Maggie Newman, depicts the 13 routes, while the reverse side provides useful information about these routes, what birds can be seen, general information about the Kalahari and its raptors, a raptor checklist, and even a section on safety hints for travelers.

This brochure is a useful resource for travelers who venture into the Kalahari and as more and more bird-watchers flock to the region, they will naturally contribute to the local economy. Ultimately this will promote the conservation of the region's raptors, ensuring that the Bateleur continues to soar and tumble in the Kalahari sky. Copies of the brochure can be obtained from the Northern Cape Tourism Authority (Private Bag X5017, Kimberly 8300, Northern Cape Province, South Africa; phone: 27-53-833-1434; fax: 27-53-831-2937; e-mail: tourism@northerncape.org.za), Kalahari Tourism (phone: 27-53-712-1001/2/3/4), or The Green Kalahari (phone: 27-53-337-2826).

RAPTOR CONSERVATION Ph.D. SCHOLARSHIPS AVAILABLE

Up to three Ph.D. scholarships are offered on an annual basis by the School of Geography, University of Nottingham (UK), usually to begin in September each year. Scholarships include annual payment of tuition fees and an annual maintenance grant of approx. 9,000 GBP for each of the three years of study. Candidates with an interest in raptor ecology and conservation are particularly encouraged to apply. Whilst not seen as a traditional core geography subject, applied raptor research is currently being developed in the school within the Environmental Sciences Research Group. Two Ph.D. students are currently undertaking research in this field (Golden Eagle in UK and Fish Eagle in Madagascar).

This is an exciting opportunity for pragmatic and motivated candidates to pursue their interest in this area, without having the constraints of having to fit into someone else's research agenda. Applicants are expected to have their own area of interest and will be asked to submit a research proposal with their application. Proposals can involve raptor species from any country but those involving research on threatened raptors will receive highest priority in the selection process.

Nottingham University is one of the leading research universities in the UK, and the School of Geography was rated as Grade 5 in the latest Research Assessment Exercise (RAE, 2001, graded from 1-5). Scholarships are highly competitive and candidates will be expected to have at least a good undergraduate degree and preferably a relevant M.Sc., although non-traditional students with field experience are also encouraged to apply. A proven interest in raptor conservation is essential for all candidates.

PLEASE NOTE: UNFORTUNATELY SCHOLARSHIPS ARE ONLY AVAILABLE FOR UK/EU CITIZENS. However, strong applicants from other countries may qualify for other Nottingham University Funding Awards for which they are encouraged to apply. All candidates will be expected to have a good level of verbal and written English skills. Closing date for completed applications is usually in March each year, but interested candidates are strongly advised to make contact as early as possible for informal discussion and advice on research proposals. E-mail enquiries should be sent to both Dr Michèle Clarke (michele.clarke@nottingham.ac.uk) and Ruth Tingay (dimlylit100@hotmail.com).

ANNOUNCEMENTS

RRF ELECTION RESULTS, 2003

Director At Large Outside North America (Replaces International Director #2): **Ruth Tingay** (School of Geography, The University of Nottingham, University Park, Nottingham NG7 2RD, UK; phone: 44-0-115-951-5440; fax: 44-0-115-951-5249; e-mail: dimlylit100@hotmail.com)

North America Director #2: **Gary Santolo** (CH2MHILL, 2485 Natomas Park Drive, Suite 600, Sacramento, CA 95833-2937, USA; phone: 1-916-920-0300; fax: 1-916-920-8463; e-mail: gsantolo@ch2m.com)

Director At Large #2: **Eduardo Inigo-Elias** (Cornell Laboratory of Ornithology, 1743 Ellis Hollow Road, Ithaca, NY 14850, USA; phone: 1-607-254-2120; fax: 1-607-254-2111; e-mail: eei2@cornell.edu)

Director At Large #5: **John Smallwood** (Department of Biology & Molecular Biology, SH-117, Montclair State University, Upper Montclair, NJ 07043, USA; phone: 1-973-655-5345; fax: 1-973-655-7047; e-mail: smallwoodj@mail.montclair.edu)

These directors' three-year terms run from January 1, 2004 through December 31, 2006.

UPCOMING MEETINGS

2003

October 10-13

3rd SYMPOSIUM ON ASIAN RAPTORS

Kenting, Taiwan

Contact: <http://raptor.org.tw/3rd/3index.htm> or Raptor Research Group of Taiwan, 12 F., No. 309, Fu-Hsin N. Rd. Taipei 105, Taiwan, R.O.C.; phone: 886-2-87706470; fax: 886-2-87706469; e-mail: rrgt@raptor.org.tw

October 23-26

ECOLOGY AND CONSERVATION OF EUROPEAN OWLS

Dornbirn, Austria

Contact: <http://www.ageulen.de> or Dr. Ortwin Schwerdtfeger, Quellenweg 4, D-37520 Osterode am Harz, Germany; phone: 49-05522-5184; e-mail: o.schwerdtfeger@gmx.de

November 11-12

CALIFORNIA BURROWING OWL

SYMPOSIUM

Sacramento, California

Contact: <http://www.tws-west.org> or Jack Barclay, Albion Environmental, Inc., 1414 Soquel Avenue, No. 205, Santa Cruz, CA 95062, USA; phone: 1-831-466-1786; fax: 1-831-469-9137; e-mail: jbarclay@albionenvironmental.com

2004

November 9-13

RAPTOR RESEARCH FOUNDATION

Bakersfield, California

Contact: http://www.calhawkingclub.org/field_meet/34th_Annual/ or Rick Holderman, e-mail: parabuteol1@cox.net

ON-LINE RESOURCES

RAPTOR RESEARCH CONSORTIUM

FORMED The newly formed Raptor Research Consortium (RRC) is an international forum for postgraduate and postdoctoral researchers who are

studying the ecology and conservation of raptors. The consortium was established to promote communication and networking opportunities among postgrads and postdocs who may be otherwise isolated from raptor researchers. The RRC is not meant to compete with other list-servs or groups; on the contrary, one of the reasons for its existence is because many students feel intimidated by the mostly professional status of many of the other list-serv members. The RRC will be a safe environment to discuss current raptor research, methods, techniques, questions, funding opportunities, and jobs, and will hopefully lead to some long-term collaborative partnerships in the field of raptor conservation. We are beginning to develop our website and would like to encourage all our postgrad/postdoc colleagues to join (it's free!). Details can be found at <http://www.geog.nottingham.ac.uk/raptor/>.

NEWS OF MEMBERS

Arjun Amar has moved from Scotland; he is now working on the Marianas Crow Research Project on Rota, Commonwealth of the Northern Marianas. He may be contacted at: Division of Fish and Wildlife - Rota, P.O. Box 1064, Rota, Commonwealth of the Northern Marianas 96951; phone: 1-670-532-6001; e-mail: arjuna@ceh.ac.uk.

Alvaro Camiña Cardenal has taken the position of Chairman of the East European/Mediterranean Griffon Vulture Working Group for the next two years. He also is serving as international correspondent for *Vulture News* for Spain and Europe. Alvaro may be contacted at: Apartado de Correos 339, 28220 Majadahonda, Madrid, Spain; e-mail: acamia@vodafone.es.

REQUESTS FOR ASSISTANCE

COLOR-MARKED OSPREY As part of a combined reintroduction/conservation education project, eight Osprey hacked at the Wilds in southeast Ohio this summer are paint-marked

white, pink, or green combinations on the dorsal patagium area or shoulder. Please report any sightings to aparker@thewilds.org or 1-740-638-2116.

COLOR-MARKED VULTURES Griffon and Cinereous Vultures are being wing-tagged in the Republic of Georgia. The patagial tags are white, fastened with blue pins on the right wing of the birds. The tags are printed with an alphanumeric code. Please report sightings to: Lexo Gavashelishvili, Georgian Center for the Conservation of Wildlife, P.O. Box 56, Tbilisi 380060, Georgia; phone: 995-32-537478; fax: 995-32-537479; e-mail: kajiri2000@yahoo.com.

WEIRD RAPTOR NESTS It seems that if you study any species long enough, you will see not only the norms but also some surprises. I am assembling some of the more unusual (e.g., a 6.7 m tall Golden Eagle nest, a 0.0 m tall Golden Eagle nest, a Steppe Eagle bone nest, a buzzard nest partially lined with paper money, Saker nests in attics, etc.) for an article to go to *The Journal of Raptor Research*. If you have good documentation for an extremely unusual nest and would like to contribute as a co-author on this article, send a note to David Ellis at dcellis@theriver.com or mail to HC 1 Box 4420, Oracle, AZ 85623, USA.

FOR SALE

RRF PUBLICATIONS Back issues of *The Journal of Raptor Research* (TJRR) Vol. 1-30 and all Raptor Research Reports may be purchased directly from RRF (Jim Fitzpatrick, Carpenter St. Croix Valley Nature Center, 12805 St. Croix Trail S, Hastings, MN 55033, USA; phone: 1-651-437-4359; fax: 1-651-438-2908; e-mail: jim@carpenternaturecenter.org). Some older issues of TJRR are not available. See <http://biology.boisestate.edu/raptor/rrf.htm#Back> issues for details and prices. Orders for four or more volumes receive a 30% discount. RRF decals and pins also are available. Vol. 31+ of TJRR may be purchased from the Ornithological Societies of North America (Penny Wendland, P.O. Box 1897,

Lawrence, KS 66044, USA; phone: 1-800-627-0629 x233; fax: 1-785-843-1274; e-mail: osna@

allenpress.com).

RECENT THESES ON RAPTORS

The U.S. Geological Survey's Richard R. Olendorff Memorial Library would greatly appreciate receiving a copy of each thesis or dissertation abstracted in *Wingspan*. This allows the Library to make theses available to scientists and managers worldwide through its Raptor Information System (RIS, see *Wingspan* 7(1):16). Please send theses to: Olendorff Memorial Library, U.S. Geological Survey, Forest and Rangeland Ecosystem Science Center, Snake River Field Station, 970 Lusk Street, Boise, ID 83706, USA.

Birrenkott, A. 2003. INVESTIGATING THE CAUSE OF AVIAN VACUOLAR MYELINOPATHY (AVM) AND THE CONSEQUENCES TO THE SOUTH CAROLINA BALD EAGLE (*HALIAEETUS LEUCOCEPHALUS*) POPULATION. M.S. Thesis, Clemson Univ., S.C. 48pp.

Avian Vacuolar Myelinopathy (AVM) is a neurological disease primarily affecting Bald Eagles (*Haliaeetus leucocephalus*) and American Coots (*Fulica americana*). The disease was first characterized in Bald Eagles in Arkansas in 1994 and then in American Coots in 1996. To date, AVM has been confirmed in 6 additional avian species. AVM has been diagnosed at 10 reservoirs in 4 southeastern United States including J. Strom Thurmond Lake (JSTL) on the border of South Carolina and Georgia. Attempts to identify the etiology of AVM have been unsuccessful.

The objectives of this study were: 1) to evaluate possible exposure mechanisms of AVM, including dermal and oral routes, and to establish cause-effect linkages by fulfilling Koch's Postulates as applied to toxicology; and 2) to assess the impact of AVM to the Bald Eagle population breeding along the Savannah River drainage. Mallard ducks were used as the avian model in all trials; quail were used in addition to Mallards in the first fresh hydrilla exposure trial. Five trials were completed, including two fresh hydrilla (*Hydrilla verticillata*) trials, two cyanobacteria exposure trials, and a frozen hydrilla trial. The cyanobacteria exposure trials and frozen hydrilla trial involved gavaging Mallard ducks (*Anas platyrhynchos*) with either *Pseudanabaena catenata* (live culture), *Hapalosiphon fontinalis*, or frozen hydrilla with both cyanobacteria species present.

With the exception of the 2002 hydrilla exposure trial, results from all trials were negative or inconclusive. The hydrilla exposure trial in 2001 yielded inconclusive results. Results from all gavage trials were negative for AVM. In the 2002 hydrilla exposure trial, six of nine treatment ducks were diagnosed with AVM based upon histological lesions. This established a cause-effect linkage between aquatic vegetation and waterfowl for AVM and provided evidence supporting an aquatic source for the causal agent. While these experiments have established a cause-effect linkage between eating aquatic vegetation and the development of AVM in waterfowl, much more work is necessary to determine the exact etiologic agent that causes AVM.

AVM has had a substantial impact to the breeding eagle population along JSTL. Although both the statewide South Carolina Bald Eagle population and the statewide Georgia Bald Eagle population are increasing, AVM has significantly impacted local populations, resulting in the loss of at least 12 breeding pairs along JSTL. If AVM follows the spread of hydrilla to new reservoirs, there is a potential for the disease to impact large areas of breeding eagles' habitat, thereby making this interior habitat uninhabitable for eagles.

Mika, M. 2003. PREY BASE DIFFERENCES AND REPRODUCTIVE OUTPUT OF FLAMMULATED OWLS (*OTUS FLAMMEOLUS*) IN NORTHERN UTAH. M.S. Thesis, Brigham Young Univ., Provo, Utah. 49pp.

During the breeding seasons of 2000 and 2001, Flammulated Owls (*Otus flammeolus*) in northern Utah were monitored to determine if abundance of food resources or delivery rates were limiting factors in reproductive output. After nest initiation, clutch, brood and fledgling numbers in addition to environmental variables were measured at each nest location. Night surveys to obtain food delivery rates by owls and insect abundance near the nest began at dusk. Lepidopteran insects (60.3%) were the most common prey items delivered to nests, followed by orthopteran insects (15.1%). Insect prey was more abundant near nest locations producing three or four fledglings compared to lactations with fewer fledglings per nest. Insect abundance was higher for the Mantua population compared to Snow Basin. Temperature and humidity did not influence abundance of insect prey, and higher insect abundance did not influence food delivery rates. High quality insect prey abundance rather than delivery quantity positively influenced reproductive output. Higher fledgling numbers reduced parental effort per nestling. The Snow Basin population during the years of study had increased breeding values such as clutch and brood sizes, numbers of fledglings, hatching rates, fledglings per brood, and fledglings per clutch compared to the 1997-2000 period. The opposite trend was observed in the Mantua populations.

Moulton, C. E. 2003. ECOLOGY OF BURROWING OWLS IN SOUTHWESTERN IDAHO: ASSOCIATION WITH AGRICULTURE, FOOD HABITS, AND TERRITORIAL BEHAVIOR. M.S. Thesis, Boise State Univ., Idaho. 113pp.

Western Burrowing Owls (*Athene cunicularia hypugaea*) are the only species of raptor that show an affinity for agricultural areas in southwestern Idaho. The underlying mechanisms leading to this association have not been previously examined. To determine potential factors underlying the association of Burrowing Owls with agriculture, I examined the availability of suitable nest burrows (burrow availability hypothesis), abundance of potential prey (prey availability hypothesis), and predation of nest burrows (predation hypothesis) during the 2001 and 2002 breeding seasons. Nest burrow availability did not differ between agricultural and non-agricultural habitats, and occupancy rates of owls in artificial burrows were greater near agriculture. More rodent prey species were live-trapped in agricultural habitat compared to non-agricultural habitat, but there was no difference in relative abundance of prey between habitat types. Pellet remains indicated a greater abundance and biomass of prey being consumed in agricultural habitat compared to non-agricultural habitat. Finally, predation rates of artificial nests did not differ between habitats. These findings allow me to reject the burrow availability and predation hypotheses for the association between owls and irrigated agriculture in southwestern Idaho, while the prey availability hypothesis remains tenable. Thus, Burrowing Owls may nest near irrigated agriculture because of increased diversity or availability of prey.

To investigate the diet composition of Burrowing Owls nesting in the Snake River Birds of Prey National Conservation Area of southwestern Idaho, I collected and analyzed regurgitated pellets and documented prey remains. I used this information to accomplish two objectives: 1) describe the breeding season food habits of Burrowing Owls in the study area, and 2) compare food habits of owls nesting in agricultural and non-agricultural habitats. Although Burrowing Owls consumed a greater percentage of arthropod prey items than vertebrate prey items, vertebrate species comprised a greater percent biomass. Coleopteran, Orthopteran, and Arachnid species were common invertebrates found in regurgitated pellets, but they were not well represented in prey remains. *Microtus montanus*, *Perognathus parvus*, and *Peromyscus maniculatus* were common vertebrate species in both pellets and prey remains. *Microtus montanus*, which were not present in pellets in non-agricultural areas, represented the greatest percent biomass of pellets in agricultural areas. *Perognathus parvus*, which occurred in pellets in both habitats, represented the greatest percent biomass in non-agricultural areas. Pellets of owls nesting in agricultural areas had greater species richness, but pellets from nests in non-agricultural areas had greater species evenness and broader food-niche breadths. These results suggest that diets of Burrowing Owls within the NCA can vary by habitat, and such variation may reflect differences in prey availability between agricultural and non-agricultural habitats.

Finally, to investigate the potential expression of territorial behavior of Burrowing Owls, I conducted playback experiments on owls nesting in southwestern Idaho during the 2001 and 2002 breeding seasons. My objectives were to 1) determine if Burrowing Owls actively defend their nesting site from conspecifics and 2) if so, determine the extent of their territorial boundaries. Eighty-eight percent of male Burrowing Owls ($n = 42$) responded to the broadcasting of conspecific primary calls. All responsive males uttered primary calls, while other common behaviors

were approaching the broadcast speaker, "white-and-tall" stances, and bobbing. Females responded less frequently than males, but one female whose mate was missing, and presumably dead, exhibited an intense response to the playback trial. There were no differences in 1) number of primary calls uttered, 2) number of "white-and-tall" stances performed, or 3) number of bobs of focal males between three broadcast distances: 0 m, 50 m, and 100 m from the active nest burrows. However, focal owls approached the broadcast speaker more closely at broadcast distances of 0 m and 50 m than at 100 m. These findings suggest that 1) owls actively defend their nesting site from conspecifics, 2) they defend an area larger than that immediately surrounding the nest burrow, and 3) although they will continue to vocalize at distances of at least 100 m, they may not physically approach an intruder at this distance as frequently as shorter distances. Therefore, Burrowing Owls appear to defend a territory that encompasses some, but not all, of the foraging area used during nesting.

Verma, A. 2002. WINTERING ECOLOGY OF MARSH HARRIER. Ph.D. Diss., Mumbai Univ., India. ~450pp.

Marsh Harrier's (*Circus aeruginosus*) wintering ecology was taken up for four winters (October 1996 - April 2000) in Keoladeo National Park (27°7.6' to 27°12.2' N and 77°29.5' to 77°33.9' E, area = 29 sq. km.), Bharatpur, India with the objectives to study its population and distribution, habitat utilization, food and feeding habits, time budgets and activity patterns, and roost and roosting behavior. The Park was identified as an important staging and wintering ground. During a peak season c. 150 harriers roosted in the Park. They were among the first migratory raptors to arrive (August) and last to depart however few juveniles were sighted till June.

The population built up between October and January (20-32 birds), which stabilized by December onwards (8-10 birds). It depended on the arrival of waterfowl-their major prey in the Park from environs. A significant difference in the population was recorded in early winters (Aug-Nov) ($\chi^2_3 = 20.7$, $p < 0.05$) during various years.

The Marsh Harriers utilized wetland, grassland, crop fields, and fallow land in and around the Park. The wetland was the most utilized habitat (90%, $n = 3836$). It was observed that female Marsh Harriers were confined to the wetlands (96%) followed by juveniles (80%) and males (63%). Perch Preference Indices showed mounds to be preferred by juveniles (PPI = 1.5), logs by males (PPI = 1.5) and stumps by females (PPI = 1.1) during resting and foraging.

The Marsh Harrier was recorded as a generalist, and a solitary feeder. Food was obtained mostly by scavenging (56%, $n = 1453$) than hunting (24%) in the Park. The diet of harriers estimated by direct observation (430) and pellets (480) included insects, molluscs, fish, reptiles, birds, and rodents. The birds were major prey followed by rodents and reptiles. Both pellet analysis ($\chi^2_3 = 2.4$, $p > 0.05$, Kruskal-Wallis Test) and direct observations ($\chi^2_6 = 12.98$, $p > 0.05$) showed the diet of the Marsh Harriers to be consistent over a period of four years.

Data on time-budgets and activity patterns of the harriers were accumulated (532 hrs) by following them throughout the daylight hours. Radio telemetry was also attempted during 1999-2000 to collect information on home range. The major activity of the Marsh Harrier was resting (37%) followed by foraging (33%) and maintenance (23%). Though no uniform foraging pattern was observed however it peaked during forenoon (0900-1200 hrs). They rested more during 1500-1800 hrs. The average wintering home range of Marsh Harrier was recorded to be 1.7 sq. km (± 0.28). They protected their food territories by vocalizing at the intruders mostly conspecifics and chasing them away from their territories.

The roosting population was estimated by counting harriers coming to the roost from vantage points 2-3 hours before sunset. Four harriers were radio-tagged (1999-2000) to determine how far they range from the roost, to locate new roost areas and to study roosting behaviour. The roost established generally by September and the number peaked between October-November ($n = 132$). The week-population fluctuated during both September and November while it was more or less stable in other months. The males' number was always high in early winters whereas females' took over during mid winters and remained dominant thereafter. The harriers roosted in the grassland, wetland (with floating vegetation), crop fields, sedge land, pasture land and ploughed fields in and around the Park. However the grassland of the Park was preferred and only on disturbance they shifted to other roost areas.

As such there was no major threat for harriers in the Park except grass-cutting and inundation of roost area during peak season however intensive use of pesticides in the fields all around the Park which served as foraging grounds for a large number of harriers may pose a serious life threat in near future.

(Editor's note: Dr. Verma may be contacted at vermaasok@rediffmail.com.)

INTRODUCTION TO RAPTOR FIELD TECHNIQUES

Stevens Point, Wisconsin
5-9 October 2003

A 5-day workshop entitled "Introduction to Raptor Field Techniques" will be held 5-9 October 2003 in Stevens Point, Wisconsin by Eugene Jacobs of the Linwood Springs Research Station and Loren Ayers of the Wisconsin Department of Natural Resources. Receive first-hand experience working on live raptors: capturing and handling techniques, broadcast call surveys, tree climbing and rappelling, habitat sampling techniques, telemetry equipment, and more. Cost is \$US 395, and space is limited. For more information, visit: <http://www.raptorresearch.com>; for reservations, contact Eugene Jacobs (e-mail: lsrs@raptorresearch.com).

THE MORLEY NELSON FELLOWSHIP

The Morley Nelson Fellowship, awarded by the Conservation Research Foundation, is a stipend of up to \$600 to support work reflecting the multi-faceted career of Morley Nelson. Priority will be given to applicants in raptor research, management, and conservation who might use the stipend to supplement or attract other funding. More than one award could be made each year, and Fellowships could extend more than one year. The criteria for this Fellowship are broad and not restricted to raptor research; anything bearing on the conservation of raptors will be considered, such as habitat issues, education, cinematography, etc. Send three copies of a brief proposal (≤ 4 pages, including a 1-page personal resume) outlining goals, objectives, and expected results/products of the study or activity, names of three references, total budget, and other sources of support to: William G. Mattox, Conservation Research Foundation, 8300 Gantz Avenue, Boise, ID 83709, USA; phone: 1-208-362-3435; e-mail (for information only): wgmatttox@aol.com. Deadline is 1 October.

WINGSPAN CONTRIBUTIONS

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Wingspan welcomes contributions from RRF members and others interested in raptor biology and management. Articles and announcements should be sent, faxed, or e-mailed to the editor: Leonard Young, 1640 Oriole Lane NW, Olympia, WA 98502-4342, USA (phone/fax: 1-360-943-7394, e-mail: rrfwingspan@comcast.net). Deadline for the next issue is February 7, 2004.

**"RETURN OF THE PEREGRINE
A North American Saga of Tenacity & Teamwork"**

Editors: Tom J. Cade and William Burnham

Publisher: The Peregrine Fund

Distribution Date: November 2003

The Peregrine Falcon restoration is the largest and most comprehensive endeavor to restore wild populations of an endangered species ever accomplished. The magnitude of the program and level of cooperation achieved are unique in nature conservation. Why and how this effort was achieved is documented in this book and serves as an example of what can be accomplished when people are willing to work cooperatively.

Authored by 68 people with long-term involvement, and most of the individuals key to the success, the story is presented chronologically, topically, and geographically. Tom Cade begins with a prologue on the life history traits of the Peregrine Falcon in relation to recovery as only someone with over 50 years of experience can write. In the following 21 chapters and 54 sidebars, the story unfolds in each author's own words. A special effort has been made to include the names of those people actively involved and influencing the restoration effort, including extensive lists of hack site attendants and other field personnel in Canada and the United States.

Although the focus is in North America, including Greenland, the story extends to Europe with two renowned British scientists contributing chapters. Derek Ratcliffe tells his story of discovering DDT as the cause for Peregrine Falcon decline, followed later in the book by Ian Newton documenting the contribution of the restoration program to the understanding of the Peregrine and summarizing what is known about the species.

The book is intended for a non-scientific audience but does contain previously unpublished information, tables, and graphs plus an extensive literature cited section and a bibliography of Eastern and Midwestern Peregrine restoration publications from 1971-2000. Approximately 400 pages, this large format book features more than 450 photographs, many with historical significance. Several master artists have contributed their paintings of Peregrines for reproduction here, including a dust jacket painting by famed North American wildlife artist Robert Bateman. Information on the book is available at www.peregrinefund.org or at 1-800-377-3716.



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